REMARKS

The Office Action dated March 5, 2009, and subsequent Advisory Action dated May 13, 2009, has been received and carefully noted. The following remarks are submitted in conjunction with Applicant's Response filed on May 6, 2009, as a full and complete response thereto.

Claims 1-18 are currently pending in the application, of which claims 1, 10, 14, and 18 are independent claims.

In conjunction with Applicant's Response filed on May 6, 2009, Applicant respectfully requests reconsideration and timely withdrawal of the pending rejections, and respectfully submit that claims 1, 10, 14, and 18, and the claims that depend therefrom, are in condition for allowance.

Double Patenting Rejections

The Office Action rejected claims 1-18 under the judicially created doctrine of non-statutory obviousness-type double patenting over claims 1-19 of U.S. co-pending Application No. 11/630,159. The double patenting rejection is provisional because the conflicting claims have not yet been issued. Accordingly, the filing of a Terminal Disclaimer, as requested in the Office Action and the Advisory Action, is premature. Applicant respectfully requests that the provisional rejection be held in abeyance until the present application or the co-pending application is in condition for allowance and the claims are in final form.

Claim Rejections under 35 U.S.C. §102(e)

The Office Action rejected claims 1-18 under 35 U.S.C. §102(e) as allegedly anticipated by Liu, *et al.* (U.S. Patent No. 2004/0190467) ("Liu"). The Office alleged that Liu discloses or suggests every claim feature recited in claims 1-18. Applicant respectfully submits that the claims recite subject matter that is neither disclosed nor suggested in Liu.

Claim 1, upon which claims 2-9 depend, recites a method. The method includes receiving beacon frames at beacon intervals, extracting beacon interval information from a beacon frame, and monitoring data traffic of a terminal. The method further includes defining at least one parameter describing a data traffic pattern of the terminal, and dynamically controlling a power state of the terminal by the terminal, on the basis of the at least one parameter describing the data traffic pattern of the terminal and the beacon interval information, so that the terminal is maintained in one of at least two power states. The at least two power states include an active state and a power save state.

Claim 10, upon which claims 11-13 depend, recites an apparatus. The apparatus includes a receiver configured to receive beacon frames at beacon intervals, and an extractor configured to extract beacon interval information from a beacon frame. The apparatus further includes a traffic monitor configured to monitor data traffic of a terminal and to define at least one parameter describing a data traffic pattern of the terminal, and a controller configured to manage power for dynamically controlling a

power state of the terminal on the basis of the at least one parameter describing the data traffic pattern of the terminal and the beacon interval information to maintain the terminal in one of at least two power states. The at least two power states include an active state and a power save state.

Claim 14, upon which claims 15-17 depend, recites a system. The system includes at least one system entity configured to broadcast beacon frames at beacon intervals, and at least one wireless terminal configured to extract beacon interval information from a beacon frame. The at least one wireless terminal includes a traffic monitor configured to monitor data traffic of the at least one wireless terminal and to define at least one parameter describing a data traffic pattern of the terminal. The at least one wireless terminal further includes a controller configured to dynamically control a power state of the at least one wireless terminal on the basis of the at least one parameter describing the data traffic pattern of the terminal and the beacon interval information to maintain the at least one wireless terminal in one of at least two power states. The at least two power states include an active state and a power save state.

Claim 18 recites an apparatus. The apparatus includes receiving means for receiving beacon frames at beacon intervals, and extracting means for extracting beacon interval information from a beacon frame. The apparatus further includes traffic monitoring means for monitoring data traffic of a terminal and to define at least one parameter describing a data traffic pattern of the terminal, and controlling means for managing power for dynamically controlling a power state of the terminal by the terminal

on the basis of the at least one parameter describing the data traffic pattern of the terminal and the beacon interval information to maintain the terminal in one of at least two power states. The at least two power states comprise an active state and a power save state.

Applicant respectfully submits that certain embodiments of the present invention provide non-obvious advantages. Specifically, certain embodiments of the present invention relate to at least one parameter describing a data traffic pattern of a terminal used with beacon interval information to dynamically control a power state of the terminal *by the terminal*. As a result, a power save mode can more efficiently utilize silent periods during which no transmission or reception occurs at the terminal.

As will be discussed below, Liu fails to disclose or suggest each and every element recited in claims 1-18, and therefore fails to provide the advantages and the features discussed above.

Liu is directed to a power saving mechanism for wireless LANs via a schedule information vector. Liu describes scheduling data transmissions of stations with a Schedule Information Vector (SIV) protocol. In the SIV protocol, *an access point* (AP) transmits a SIV frame that includes scheduled wake-up times for the stations. The scheduled wake-up times may be adjusted on the basis *of the network traffic*. Liu further teaches that a power saving station needs to wake up periodically for the beacon and the SIV frames. After the power saving station has received the schedule in a SIV frame *from the AP*, the power saving station decides whether to go back to sleep or to continue listening for transmissions (*See* Liu, paragraphs [0025]-[0032]).

Applicant respectfully submits that Liu fails to disclose each and every element recited in claims 1-18. In particular, Liu fails to disclose or suggest, at least, "dynamically controlling a power state of the terminal by the terminal, on the basis of said at least one parameter describing the data traffic pattern of the terminal and the beacon interval information, so that the terminal is maintained in one of at least two power states," as recited in claim 1 (emphasis added), and similarly recited in claims 10, 14, and 18.

As noted in Applicant's Response, claims 1, 10, 14, and 18 recite, in part, that the dynamic controlling of the power state of the terminal is performed *by the terminal*. The Office, both in the Office Action and the Advisory Action, fails to appreciate these features, citing a "controller 28" of Liu, as allegedly described in paragraphs [0045] and [0046] (*See* Office Action on pages 2-3 and 6, and Advisory Action on page 2), to allege that Liu describes the elements of the terminal. As noted in Applicant's Response, the Office cites to *non-terminal* elements to allege that Liu discloses the features recited in the pending claims.

Applicants note that Liu describes element "28" as a "network layer," rather than a "controller." The network layer 28 transmits and receives data between the AP and a terminal. Contrary to the Advisory Action's allegations, Liu fails to describe or suggest that the network layer 28 is a controller "dynamically controlling a power state of the terminal." The Office alleges that it has taken the broadest reasonable interpretation of the claimed subject matter, however, the Office Action and the Advisory Action each fail

to demonstrate that Liu describes "dynamically controlling a power state of the terminal by the terminal," as recited in the pending claims (emphasis added).

A review of paragraphs [0045] and [0046] of Liu demonstrates that Liu fails to disclose or suggest the features recited in the pending claims. In particular, Liu, in paragraphs [0045] and [0046], describes that "the SIV frame protocol *of the wireless network* may be dynamically adjusted to provide the scheduled wake-up times of the stations .... These dynamic adjustments may be made based on one or a combination of network traffic, traffic buffering times, etc.

The Office Action alleged that the parameters, such as the station identifiers and the scheduled wake-up times in the SIV frame, correspond with the features for the "at least one parameter describing a data traffic pattern of the terminal," as recited in claim 1, and similarly recited in claims 10 and 14. Rather, Liu teaches that the parameters, such as station identifiers or scheduled wake-up times in the SIV frame, as shown in FIG. 5B, identify each station and the time instants each of the stations is scheduled to transmit a transmission on either an uplink or downlink Adjustments to scheduling only consider *network traffic in the access point.*

The Office Action further alleged that the teachings in Liu for the "adjusted to schedule wake-up time" correspond to the features for "dynamically controlling," as recited in claim 1, and similarly recited in claims 10, 14, and 18. Rather, Liu describes that the stations decide on entering the sleep mode or remaining awake, based on the length of the schedule (Liu, paragraph [0084]). Thus, the schedule received in the SIV

frame fails to control the power state of the stations. Further, the station needs to make separate decisions on entering the sleep mode or remaining awake. The information on the wake-up time of the station and the length of the schedule may be used for making this decision. Therefore, the sending of the SIV frame *from the AP*, as described in Liu, fails to disclose or suggest, at least, "dynamically controlling the power station of the terminal by the terminal," as recited in claim 1 (emphasis added), and similarly recited in claims 10, 14, and 18.

In fact, Liu actually teaches away from the features recited in claims 1, 10, and 14. Liu describes that the wake-up times cannot be used for controlling the power state of a station. In paragraph [0084], Liu teaches that there may not be any net power savings benefit for a station entering the sleep state if the station's scheduled transmission will follow the SIV frame in a short time. The station entering and leaving the sleep state on the basis of the wake-up times in the SIV frame may end up with a high power consumption than if it would not enter the sleep state. Therefore, one of ordinary skill in the art would have understood that the wake-up schedule in the SIV frame is unsuitable for *dynamically controlling the power state of the terminal.*

Hence, Liu describes that the scheduling of wake-up times is performed *in the access point*, whereas certain embodiments of the present invention describe that the scheduling of transmissions is performed *by the terminal.* Furthermore, the SIV frame, as taught in Liu, only provides scheduling on the basis *of the network traffic.* Therefore, one of ordinary skill in the art would have clearly understood that Liu fails to teach control of

the power state *of the terminal.* Therefore, Liu fails to disclose or suggest, at least, "dynamically controlling a power state of the terminal by the terminal, on the basis of said at least one parameter describing the data traffic pattern of the terminal and the beacon interval information, so that the terminal is maintained in one of at least two power states," as recited in claim 1 (emphasis added), and similarly recited in claims 10, 14, and 18.

Claims 2-9 depend from claim 1. Claims 11-13 depend from claim 10. Claims 15-17 depend from claim 14. Accordingly, claims 2-9, 11-13, and 15-17 should be allowable for at least their dependency upon an allowable base claim, and for the specific limitations recited therein.

Therefore, Applicant respectfully requests withdrawal of the rejections of claims 1-18 under 35 U.S.C. §102(e) and respectfully submits that claims 1, 10, 14, and 18, and the claims that depend therefrom, are in condition for allowance.

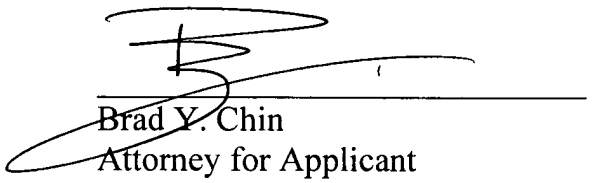
CONCLUSION

In conclusion, Applicant respectfully submits that Liu fails to disclose or suggest each and every element recited in claims 1-18. The distinctions previously noted are more than sufficient to render the claimed invention unanticipated. It is therefore respectfully requested that all of claims 1-18 be allowed, and this present application be passed to issuance.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, Applicant's undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, Applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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Enclosures: Request for Continued Examination (RCE) Transmittal
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